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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/856,143	05/30/2001	Keiichi Tanaka	208719US2PCT	6065

22850 7590 03/11/2004

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.  
1940 DUKE STREET  
ALEXANDRIA, VA 22314

EXAMINER
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WELLS, NIKITA

ART UNIT	PAPER NUMBER
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2881

DATE MAILED: 03/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/856,143

Applicant(s)

TANAKA, KEIICHI

Examiner

Nikita Wells

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 May 2001 and 20 August 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 20 and 21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 and 22-24 is/are rejected.
- 7) ☒ Claim(s) 11, 17 and 24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

1. The Applicant canceled claims 20-21 according to the "Second Preliminary Amendment" received August 20, 2001. The Applicant amended claims 4, 9, 15, and 19, and added claims 22-24, according to the "Preliminary Amendment" received May 30, 2001.

***Claim Objections***

2. Claims 11, 17, and 24 are objected to because the "period of 4P/3" is not defined in each claim. The letter P should be defined as: --P is the coil module width-- as shown in Fig. 8B and described on page 28. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

4. Claims 1-19 and 22-24 are rejected under 35 U.S.C. 102(e) as being anticipated by K. Tanaka (6,339,266 B1).

With respect to the independent claims 1-5, 10, and 23, K. Tanaka discloses (Abstract; Fig. 1; Col. 1, lines 43-57; Col. 2, lines 1-10; Col. 18, line 58 to Col. 19, line 2; Col. 27, lines 19-39; and Col. 30, lines 16-34) a stage unit (30) comprising: a driver that includes a mover (51) and a stator (60); and reaction canceling mechanism that applies to the stator (60) a force to cancel a reaction acting on the stator (60) due to driving of the mover (51) by an electromagnetic

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interaction (Col. 1, lines 43-57), wherein the reaction canceling mechanism generates forces, which cancel the reaction in at least two points of the stator (60).

With respect to claims 7-9 and 19, K. Tanaka discloses (Figs. 3, 11, and 18; Col. 1, lines 43-57) a stage unit (30), with a control system (see Col. 23, lines 39-46) that controls the directions and amplitudes of currents supplied to the armature coils (38), wherein the reaction canceling magnetic pole unit (56) comprises reaction canceling magnetic pole units (56) that generate magnetic fluxes crossing the current paths armature coils (38) arranged on the four corners of the armature unit (53) (Fig. 18); and control system that controls the directions and amplitudes of currents supplied to the armature coils (38) arranged on the four corners of the armature unit, and wherein the reaction canceling magnetic pole units and the stator are mechanically independent of each other.

With respect to claims 6, 11-18 and 22, K. Tanaka discloses (Figs. 1, 3, 11, and 18; Claims 1, 2, and 20; Col. 4, lines 1-16; and Col. 6, lines 5-22) a stage unit (30) comprising: an armature unit (53) that includes a plurality of armature coils (38) (see Fig. 11 and Col. 23, lines 32-46), which are arranged the shape of a matrix and have current paths almost parallel to the predetermined plane; a magnetic pole unit (56) that has a plurality of magnets magnetized in directions not perpendicular to the predetermined plane and two-dimensionally generates an alternating magnetic field with a period  $4P/3$  in two axis-directions perpendicular to each other, between the armature coils (38) and itself, practically without generating any magnetic field in an area opposite to the armature unit (53); and a current driver that moves the magnetic pole unit (56) relatively to the armature unit by supplying currents to the respective armature coils (38).

With respect to claims 12 and 13, K. Tanaka discloses (claims 6 and 8, respectively) a stage unit

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(30) further comprising a magnetic member supporting the armature coil (38) in a side opposite with the magnetic pole unit (56) and flat-plate-like shaped member that is placed between the armature unit (53) and the magnetic pole unit (56) and made of a non-magnetic material.

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Both S. Li (6,417,914 B1) and Ebihara et al. (6,246,204 B1) disclose a stage unit of an exposure apparatus to be used in a lithography process to control the position of a sample to be irradiated. This stage unit includes a plurality of armature coils, which are arranged the shape of a matrix and a magnetic pole unit that has a plurality of magnets.

6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nikita Wells whose telephone number is (703) 305-0416. The examiner can normally be reached 8:30 AM - 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on (703)

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308-4116. The central fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Nikita Wells

Primary Examiner, Art Unit 2881

February 18, 2004